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Performance Through Technology and Service

INFO SHEET

Fiberglass Pool Osmosis

Additional information about Osmosis and how to deal with it.

Osmosis (hydrolytic degradation of permanently immersed fibreglass laminates) is a common issue with some if not most fiberglass pools (and boats). The contributing factors to these processes are: poor wetting of the glass fibers by the polyester resin, air entrapment in fiber bundles, hydrolysis of the sizing, the resin matrix etc. All of these can be closely related to the manufacturing techniques and the materials used, along with the skill of the fiberglass operators at the time of construction. Osmosis issues, if any, tend to show up 10 -15 years after construction although may show sooner if the initial application/construction was deficient. Osmosis issues are evidenced by blisters or bubbles on the surfaces of the pool. There may be only a few or many. They may be localised or all over the pool surface. Such blisters can be a serious problem if left unattended. At some point, your pool may need extensive repair, including gel coat removal and a new fibreglass liner.

There are two types of blisters: **Gel coat and Interlaminate**.

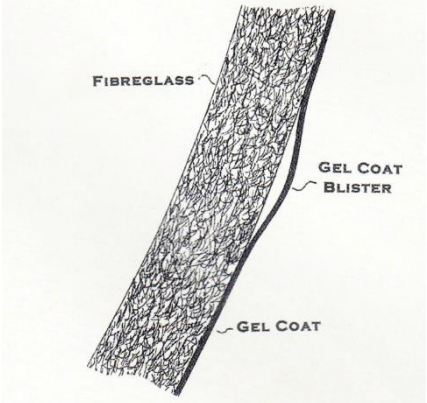
Gel Coat Blisters: These are relatively benign, where the gel coat is lifting up in small blisters from the surface, leaving sound fibreglass underneath. They may have black spot associated with them if perforated.

Interlaminate Blisters: This is where osmotic pressure within the fibreglass is forcing the laminates apart creating large blisters, as big as 8" across and up to ¾" high.

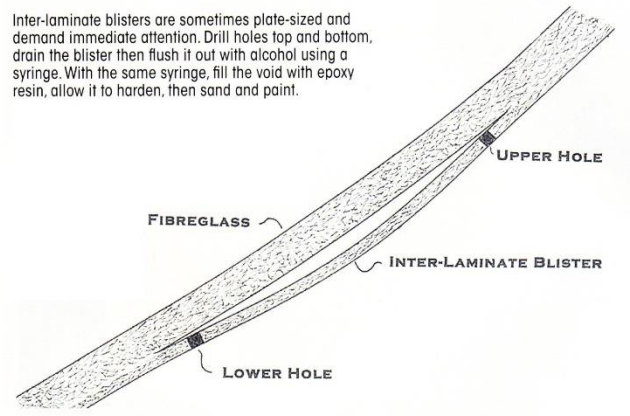
Please refer to the PaintNForget Application Notes in conjunction with this information sheet.

Repair of Gel Coat Blisters: These are best identified immediately after the pool is emptied of water. Don't wait, even an hour or two, fewer blisters may be seen because blisters often deflate over time. The damage is there, just more difficult to identify. Sand off the top of the blisters and about 1" – 2" beyond their edge. Wash thoroughly and allow to dry out. Mix and apply by palette with knife a fiberglass or epoxy patch filler, forcing into the space and leaving an even finish. When sanding the rest of the fibreglass surfaces, sand (Hand or orbital) these too, to create a smooth transition. Usually #80 grit followed by #120 – 160 grit is the best way. (Refer to diagram on right)

Gel coat blisters are usually small and non-threatening, but nevertheless demand attention. They should be sanded off and faired.



Inter-laminate blisters are sometimes plate-sized and demand immediate attention. Drill holes top and bottom, drain the blister then flush it out with alcohol using a syringe. With the same syringe, fill the void with epoxy resin, allow it to harden, then sand and paint.



Repair Interlaminate Blisters: these can usually be seen best in side lighting as the dome may be only a 1/16" high, but the width can be 8" or more. Mark perimeter with felt pen and drill a 1/8" – ¼" hole at top and bottom to allow the fluid inside to drain out. Flush out with Methylated Spirits (use a plastic syringe of same size as the drilled hole) and repeat until reasonably sure it's clean inside. Allow to dry for a warm sunny day. Inject an epoxy resin mix (such as Araldite) into the bottom hole and when it ALMOST comes out the top hole, seal it with duct tape. Remove syringe and immediately seal bottom hole with a precut wooden plug. Allow to cure (24hrs) before removing tape and plug. Fill any indentions with epoxy mortar. Sand carefully to blend in, BUT do not sand it out as for the small gel coat blisters. It's now full of inert epoxy and will be in a stable state for quite some time if done well.

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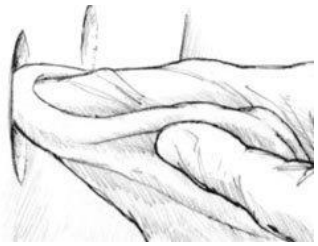
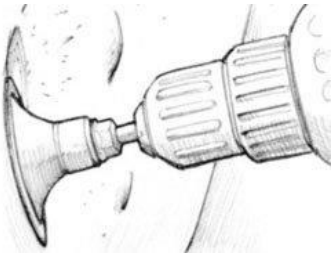
As an alternative, you may consider grinding out the blisters completely. See the WEST System.

- Use an angle grinder or drill with #40 – 60 grit flexible sanding disc (or a suitable grinding disc such as 3M's Rolock™ 2") to remove all blisters and surrounding areas to about 1" – 2" beyond blisters. You will cut into the fibreglass itself and there may be water inside them. Be careful not to go right through but to a depth of about ¼ ins or less.





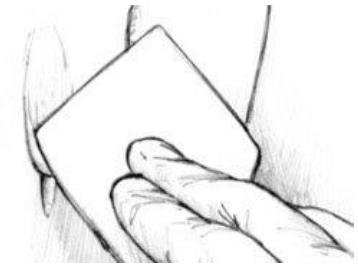
- Wipe out such areas with paper towels soaked in rubbing (isopropyl) alcohol, to help remove water. Don't overuse towels but replace with new. Allow to dry for as long as possible, several dry windy days at least. Cover Pool with tarp if wet weather expected

- To fill holes, use 10oz fibreglass cloth and WEST SYSTEM Epoxy 105/206,
  - B pack (slow) (Usually available from a boat chandler or www.westsystem.com. Sand back once cured.
- Then fill remaining voids with same to fill up to nearby surfaces.

- Also, can add either West System fillers 403 or 405, to fill out mix into a paste consistency. Follow guidelines in the West Systems pack. Use West System Mini Pumps for accurate resin – hardener rations and good curing outcomes.

- Once cured, sand back flush with adjoining areas.

- Now you are ready to mix and apply PaintnForget coating.



NOTE: Wear dust filters, eye protection etc when carrying out this work.

SUMMARY:

Depending on the factors that cause blisters in your particular pool, one of the following may apply:

- Repairing isolated blisters may solve your problem.
- Repairing isolated blisters from time to time and keeping an eye on further developments, if any.
- Repairing isolated blisters may only slow the advancement of blisters and postpone an extensive repair.
- Have a whole new Fibreglass liner installed in your pool as a long term answer.
- If there are a lot of these types of blisters, then one must consider having a new fiberglass liner placed in your pool. Discuss with a competent fiberglass contractor.

See our web site for more information:
https://paintnforget.com

Or call us for assistance.

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